

Emissions Trading:

Issues and Options for Domestic and International Markets

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The Business Council for Sustainable Energy (BCSE) is an industry trade group that was created in 1992 by companies concerned about the economic, national security and environmental impacts of energy production and use. Its members include industry trade associations and companies in the energy efficiency, natural gas, renewable energy and electric utility industries. The Council's current Chairman is Scott Weiner, Senior Vice President, Sithe Energies. For more information or to become a member, contact the Council at the address below.

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ACRONYMS

AAU	Assigned Amount Unit
BCSE	Business Council for Sustainable Energy
CBA	Commonwealth Bank of Australia
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP-6	Sixth Conference of the Parties to the United Nations Framework Convention on Climate Change
COP/MOP	Conference of the Parties as the Meeting of the Parties
ERU	Emission Reduction Unit
EU	European Union
HEW	Hamburgische Electricitäts-Werke AG
IEA	International Energy Agency
JI	Joint Implementation
TEPCO	Tokyo Electric Power Company
UNFCCC	United Nations Framework Convention on Climate Change



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Introduction: Emissions trading programs offer governments and industry a potentially cost-effective option to comply with environmental regulations. Based on recent experience in the United States with the sulfur dioxide trading program under Title IV of the Clean Air Act Amendments, several lessons can be drawn. If properly structured, emissions trading programs can assist participants in meeting emissions reduction targets; reduce incidents of non-compliance; decrease the costs of compliance; provide incentives for technological innovation and new environmental management practices; and place a monetary value on, as well as create competitive advantages for, good environmental practices.

Since 1997, over 80 nations have signed the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC). The Protocol imposes binding commitments on most industrialized nations to reduce greenhouse gas emissions collectively by 5.2 percent below 1990 levels between 2008 and 2012. The Protocol includes market-based flexibility mechanisms, like emissions trading, to assist nations in meeting their emissions reduction targets under the treaty. The U.S. has signed, but not yet ratified, the Kyoto Protocol. While views differ on how global climate change should be addressed, the Business Council for Sustainable Energy (BCSE) accepts that global climate change, and its associated threats, warrant a serious response. Emissions trading and other market-based mechanisms have an important role to play in reducing greenhouse gas emissions that contribute to global climate change.

BCSE Industry Roundtable Series

Since the adoption of the Kyoto Protocol in December 1997, the BCSE has held over a dozen industry roundtables on climate change issues. Participants have included industry executives, representatives from the financial and legal sectors, government officials and other stakeholders. Six of these roundtables have focused on emissions trading issues. The most recent roundtable on emissions trading was held in July 2000 and focused on elements of a domestic program in the U.S.

This paper is intended to serve as a short primer on several domestic and international emissions trading issues for companies and decisionmakers who are interested in climate change policy. It also discusses select greenhouse gas emissions trading activities. The views expressed in this paper are based on interviews with emissions brokers, company executives and other stakeholders. It also includes opinions voiced during industry roundtables convened by the BCSE.¹

Setting the Stage for Greenhouse Gas Emissions Trading:

Greenhouse gas emissions trading refers to a system that imposes a limit on emissions of carbon dioxide and other greenhouse gases and allows participants to transfer emissions reductions to entities that wish to acquire the reductions. The acquiring entity can use the reductions (in the form of allowances) for compliance purposes, hold or bank them to meet future emissions targets or sell them on the trading market. Emissions trading enables emissions reductions to occur where it is comparatively more efficient and allows environmental objectives to be met at a lower cost to governments, industry and consumers. A recent study by the International Energy Agency estimated that greenhouse gas emissions trading could reduce compliance costs under the Kyoto Protocol by nearly 60 percent.²

¹ On July 25, 2000 the BCSE convened an industry roundtable with the Emissions Marketing Association entitled *Emissions Trading: Auction vs. Allocation*. The Council also sponsored an industry roundtable on *Risk Management for Greenhouse Gas Emissions Reductions* on April 18, 2000 that covered several international emissions trading issues.

² International Energy Agency presentation by Richard Baron and Jonathan Pershing. 13th Session of the Subsidiary Bodies to the UNFCCC. (Lyon, France) September 2000. Please refer to <http://www.iea.org/envissu/lyon.pdf>.

The Kyoto Protocol: In Brief

The Kyoto Protocol, adopted by over 160 countries in December 1997, imposes mandatory greenhouse gas emissions reduction obligations on 38 developed countries known as Annex B countries.³ The emissions reduction target for developed countries, in aggregate, is 5.2 percent below 1990 levels between 2008 and 2012. Under the agreement, the U.S. is committed to reduce its greenhouse gas emissions by 7 percent below 1990 levels in the first compliance period. The U.S. has signed the treaty, but has not submitted the Protocol to the Senate for ratification.

The Kyoto Protocol includes several forms of emissions transfers through its flexibility mechanisms.⁴ Transfers and acquisitions of units of carbon dioxide equivalent are permitted, through emissions trading and Joint Implementation (JI), between and among Annex B nations. The Protocol also permits transfers between Annex B and non-Annex B Parties through the Clean Development Mechanism (CDM). JI and CDM are project-based mechanisms; emissions reductions that are generated under the CDM, called Certified Emission Reductions (CERs), can be used by a Party to help meet its target. Emissions trading involves transfers of assigned amount units (AAUs) based on a Party's emissions limit under the Protocol. AAUs are units equal to one metric ton of carbon dioxide equivalent and represent a portion of a Party's allowable emissions during the commitment period. JI permits transfers of credits, called Emission Reduction Units (ERUs), that are generated by projects in Annex B countries.

If the Protocol enters into force, the U.S. is likely to assign a large part of its emission reduction obligation to domestic industries. Many nations, including the U.S., have also been considering domestic trading programs to reduce greenhouse gas emissions, even in the absence of

international action or the Kyoto Protocol. As large emitters, many sectors of the business community will have a role in reducing greenhouse gas emissions if domestic or international regulations are adopted. Despite uncertainty about ratification of the Kyoto Protocol in the U.S., emissions trading is considered by the business community to be one of the more viable and cost-effective means to reduce greenhouse gas emissions at home and abroad.

The first two sections of the paper provide an overview of leading domestic and international emissions trading policy issues. The third section discusses recent emissions transactions as well as trends on participants, legal issues, market drivers and transparency, project type and price based on interviews with trading brokers and other experts. The conclusion recommends areas for further consideration by industry and decisionmakers.

Domestic Emissions Trading Issues: While U.S. Congressional consideration of domestic credit for early action proposals has waned since the death in 1999 of a leading proponent in the Senate, Senator John Chafee (R-R.I.), discussion of domestic emissions trading proposals for carbon dioxide and other greenhouse gases has continued. In the U.S., key issues related to the potential obligations of covered entities, including the merit of an auction versus allocation distribution system and the establishment of upstream or downstream participation, are being considered among policymakers and other stakeholders.⁵

Congressional interest in the design and implementation of a domestic emissions trading program is growing. In addition to the credit for early action bills introduced early in the 106th Congress, several electricity restructuring proposals have included provisions to establish a domestic emissions trading program. Legislation such as the "Fair Energy Competition Act," sponsored by Congressman Frank Pallone (D-N.J.), is set to be re-introduced next Congress. Other pending legislation with provisions on domestic emissions trading includes bills by Senators Jim Jeffords (R-Vt.) and Bob Smith (R-N.H.) as well as Congressmen Rick Lazio (R-N.Y.). Additionally, Smith, Chairman of the Senate Environment and Public Works Committee, is thought to be considering a trading program to help the U.S. reduce carbon emissions under the Clean Air Act reauthorization that may be taken up next Congress.⁶

³ Annex B refers to Parties listed in Annex B of the Kyoto Protocol that have adopted binding emissions targets. Annex I of the UNFCCC includes many of the same nations, but does not denote a binding emission reduction commitment. In general, developed countries have binding emissions targets while most developing countries do not have mandatory commitments, although some have chosen to make voluntary reductions.

⁴ There are four flexibility mechanisms under the Kyoto Protocol: Joint Implementation (Article 6); Clean Development Mechanism (Article 12); Emissions Trading (Article 17); and Joint Action that allows Annex I Parties to meet their commitments jointly, like the European Union (Article 4).

⁵ In this paper, "upstream" refers to fuel producers, "midstream" refers to energy producers (i.e., industrial sources and power plants where emissions are given off) and "downstream" refers to a range of end-users including small businesses and individuals.

⁶ Per conversation with staff members of Senator Smith, August 2000.

The following sections focus on how emitters of greenhouse gases could participate in a potential domestic program. Additional questions arise if the domestic program includes emissions offsets through carbon sequestration and forest management activities. A discussion of the key problems related to these issues, such as quantification of offsets, monitoring and verification, among others, is beyond the scope of this paper.

Auction vs. Allocation

The decision over auction versus allocation proposals is crucial for the establishment of a domestic emissions trading program in the U.S. In addition, if the Kyoto Protocol is ratified and enters into force, the decision on how to allocate a U.S. obligation among different sectors to ensure U.S. compliance further complicates the debate. Some are considering allocation programs similar to the Title IV sulfur dioxide trading program under the Clean Air Act, which grants emissions allowances according to historical activity (based on historical fuel use and an input-based performance standard) to specific point sources of emissions. This type of allocation system has a well-defined breadth of coverage and a select group of industries that are subject to regulation, thereby providing administrative simplicity. However, depending on how such an allocation system is implemented, it could potentially create windfall profits for certain regulated industries and could pose a considerable bias against new companies and technologies that wish to enter the market due to their lack of historic emissions.⁷ There is general acknowledgement among emissions trading stakeholders that new sources should be incorporated into an allocation plan, but how to do so is a complicated issue. The primary question for policymakers is to find an equitable means to address the size of the allocation for new sources.

A federal auction program would potentially establish a more level playing field for new sources rather than give a competitive advantage to existing sources that may be less environmentally-sound. One auction proposal currently being discussed was developed by Sky Trust.⁸ Under the terms of this proposal, the federal government would

auction emissions permits with a \$25 per ton cap (with seven percent per annum increase in the price ceiling over inflation), with the option to sell additional permits as needed at the \$25 per ton price. Seventy-five percent of the revenue generated from the auction would be transferred to consumers in the form of a rebate, while 25 percent would be allocated to state governors to distribute to industries that would face significant price shocks from the regulations. In other words, households would receive compensation in the form of a rebate for the higher cost of energy goods and services due to the tax on industry to reduce emissions.

Concern has been raised that the Sky Trust plan appears to be a tax on industry presented as a rebate to U.S. households. Others feel that the approach does not give the automatic, clear signals to industry on how to control their cost of compliance that could be achieved with direct regulation under an allocation system.

Another area of uncertainty related to the Sky Trust program lies in the distributional income effects that an auction plan would have on American households. For example, if all households were to receive equal portions of the revenue generated by the auction to offset the higher prices they are paying for energy goods and services, those households that spend a larger percentage of their income in these areas would not be compensated in relative terms.

A third option that is being discussed for a U.S. domestic trading system is called "updating-output allocation." This system uses output-based generation performance standards that are updated on an annual basis to grant allocations in proportion to an emitter's current share of fossil fuel generation. The output-based performance standard can also allocate emissions credits based on the energy efficiency and the capacity for clean energy generation of an individual plant. This plan may avoid potential windfall profits inherent to an allocation program because it adjusts the amount of credits to be allocated according to current output data, thereby providing a more equitable opportunity for new entrants in the market. Another aspect of this type of allocation system is that it does not require revenue to be rebated to consumers.

⁷ Granting emissions allowances based on a company's historic emissions is sometimes referred to as "grandfathering." The practice tends to create a bias in favor of existing companies to the detriment of new companies that have no historical emissions.

⁸ Sky Trust. Economy-Wide Proposal to Reduce U.S. Carbon Emissions. 20 June 2000. <http://www.skytrust.cfed.org>. Sky Trust is an initiative of the Corporation for Enterprise Development that aims to sell carbon emission permits and divide the income equitably among all U.S. citizens.

Upstream vs. Downstream

Another issue to be resolved in the design of a domestic emissions trading program focuses on the point of regulation for emissions. For example, should fuel producers or “upstream” entities (*i.e.*, refineries, import points, natural gas pipelines and coal processors) be the targets of a domestic plan, or should the focus be on “downstream” fuel users such as small businesses and individuals? Or should a combination of the two approaches be employed?

The upstream approach would offer certainty due to broad coverage and relative administrative simplicity, since there are only about 2,000 upstream sources in the U.S. In contrast, a downstream approach could potentially include hundreds of thousands of participants with varying levels of emissions, posing a greater degree of difficulty in terms of administration and oversight. For example, due to the technological difficulties in monitoring emissions from individual automotive vehicles and the sheer number of sources, few would suggest that allowances be allocated to vehicle users. However, some feel that a hybrid approach that would target upstream entities as well as midstream point sources (such as electric power plants) that emit carbon dioxide and other greenhouse gases directly would be both manageable and administratively feasible.

Some industry representatives feel that a regulatory system focusing on stationary point sources is preferred because under a cap-and-trade system, it is easier for regulated entities to hedge their risks and incorporate the cost of compliance into their products, allowing the target industries greater control over their business activities. In addition, many of these same companies already have experience in reducing their emissions based on compliance with the Title IV trading system.

One limitation of this approach is that while an upstream or combination system is more transparent for energy producers it is less transparent for the consumer because the costs of emissions regulations are embedded in broader prices for goods and services. While an upstream approach helps to ensure administrative simplicity, the tradeoff is a decrease in the ability of the household consumer to respond to price signals. If the cost of emissions regulations becomes too embedded in end-user prices, without assistance to counter the end-use

price impacts, then consumers ultimately absorb the added costs of the regulations.

Part of this political debate is an interest by some to address the social impacts that could result from regulation of emissions. For example, some believe that if the costs are significant enough, and consumers are not enabled to adjust their consumption to minimize the price impacts, it may result in a loss of support for environmental programs. The recent surge in electricity prices in California illustrates the political problems that can be created if price signals are difficult for consumers to respond to. While the consumer can choose to reduce consumption or increase energy efficiency, immediate price surges can still have a negative impact on household income.

Some have advocated a parallel effort to ensure that any upstream trading regime be developed in concert with mechanisms to empower consumers to respond to price signals. This could take the form of a dual approach: creating a system to establish the price signals upstream while simultaneously developing educational programs and other mechanisms aimed at addressing consumer concerns.

Despite these difficult policy choices, the U.S. would benefit from a domestic trading program. Gaining experience with trading prior to the initiation of international trading will give industry time to adjust to regulatory policies and provide an opportunity for American households to respond to potential price fluctuations. Further, consideration of a U.S. domestic trading plan will help to resolve outstanding questions related to the international emissions trading regime by developing a strong link between domestic and international trading provisions, rules and systems.



Domestic Proposals and Emissions Trading Activity

Several countries are currently considering domestic emissions trading programs to facilitate emissions reductions in their countries and to gain experience with trading prior to the implementation of a potential international trading regime. This section will highlight select domestic proposals and other activities that occurred in 2000.

United Kingdom: In July 2000, the United Kingdom agreed to finance a large-scale emissions trading plan for greenhouse gases. The decision came in part as a reaction to efforts by the Emissions Trading Group, comprised of more than 100 companies and trade bodies including BP, National Power and British Airways. The government allocated £30 million to finance incentives for companies to cap carbon emissions for greenhouse gases through 2003. Officials estimate that the proposal could cut emissions of carbon dioxide equivalent by 0.5 million to 2 million tons by 2010, helping the UK meet its Kyoto targets. Although the government has not finalized how the system will be implemented, it is considering a grandfathered allocation plan with mechanisms to treat new sources. Once caps are set, companies that exceed their targeted reductions will be able to sell the surplus in the form of credits to other companies. Although officials have maintained that other emissions reduction measures will allow the UK to meet its Kyoto targets, they have noted that the emissions trading plan will produce a useful buffer in their efforts.

Australia: In August 2000, the Australian government abandoned a domestic carbon emissions trading plan, stating that it would only mandate domestic emissions trading if Australia were to ratify the Kyoto Protocol, the Protocol had entered into force and an international emissions trading regime had been established. In addition, the Sydney Futures Exchange reversed its decision to establish a market for carbon trading, dropping its proposed contract in carbon sequestration credits. Problems inherent with the contract structure and sovereign and counterparty risks, combined with increased competition, were noted as contributing factors in the decision. The decision illustrates the controversy over carbon sequestration due to uncertainty over accounting methods and quantification of carbon uptake associated with sequestration projects.

In September 2000, BP Australia asked the Commonwealth Bank of Australia (CBA) to manage the company's new register of emission reduction units, despite the Australian government's decision not to initiate a mandatory domestic plan for emissions trading. CBA expects to make an initial acquisition of approximately 350,000 tons of carbon dioxide equivalent on behalf of BP Australia, although the exact amount is unknown at this time.

France and Norway: In September 2000, France and Norway unveiled pilot emissions trading programs. Norway's plan calls for an emissions trading program to cover 90 percent of the country's emission reduction commitment under the Kyoto Protocol, with a start up no later than 2005. Initially, the plan allows for carbon dioxide trading, but eventually will include all six greenhouse gases covered under the Protocol. The plan covers all industrial sectors and does not put a cap on the price of emissions permits.

The French plan would allow for trading of all six greenhouse gases, with credits to be negotiated between the public and private sectors. The French plan may utilize grandfathered targets or free allocations and benchmarking, taking into consideration the energy efficiency of the emissions source. It would also permit banking of emissions credits.

International Emissions Trading Issues:

Delegates at the Sixth Conference of the Parties (COP-6) in The Hague in November 2000 are expected to adopt a decision on the rules and guidelines for international emissions trading. While a loose framework was outlined in the text of the Kyoto Protocol, further elaboration is needed to define what can be traded, who is eligible to trade and whether there will be quantitative limits on trading. Several key issues have emerged related to these questions, including legal entity eligibility to trade, Party

eligibility requirements, fungibility between the units under the mechanisms, liability in the event of Party non-compliance with emissions targets and restrictions on the use of the flexibility mechanisms (often referred to as supplementarity).

Negotiators concluded preliminary talks in Lyon, France in September 2000 during the 13th Session of the Subsidiary Bodies to the UNFCCC. A four-volume negotiating text on the market-based mechanisms that includes proposals for

Article 17 of the Kyoto Protocol

“The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for their purposes of meeting quantified emissions limitation and reduction commitments under that Article.”

emissions trading rules was released. The text reflects divergent views and includes conflicting provisions in some sections. Delegates are working to narrow issues in the weeks leading up to COP-6. It is possible that the major negotiating blocs will agree to a package of provisions that address many controversial trading issues in The Hague. This section briefly describes some of these issues and provides some government and industry positions.

Legal Entity Eligibility to Trade

The Kyoto Protocol states that Parties included in Annex B can participate in emissions trading. No mention of legal entity⁹ participation is included in the text on Article 17. This may imply that companies will be eligible to trade if their domestic government agrees. Businesses that are interested in trading are looking for clear language and transparent rules on this point. Direct company participation in trading will likely facilitate an efficient, fluid global trading market and lower transaction costs associated with trades.

Many developed countries, including the U.S., support allowing legal entities to participate in trading, provided that the authorizing Party is eligible to trade.¹⁰ One of the proposals in the draft text on mechanisms states that an eligible Party “may authorize its legal entities to transfer or

acquire” emission units provided that there is sufficient oversight and reporting of trading on a domestic level.¹¹ The text also states that a Party that authorizes legal entities to participate in emissions trading “shall remain responsible for the fulfillment of its obligations under the Protocol” as well as ensure that trades are conducted in accordance with international rules.¹²

The G77 and China¹³ position on legal entity trading is mixed. During the climate change meetings in Lyon, some delegates questioned whether parts of assigned amount units could be held by legal entities; they also proposed international oversight of legal entities.¹⁴ While some attribute this to COP-6 positioning, legal entity participation has now been flagged as a potentially divisive issue.

Ultimately, national governments can choose whether to use emissions trading as a domestic policy tool. International rules would primarily affect the transparency and possible standardization of entity involvement in trading. Since the draft mechanisms text does not provide for automatic eligibility of firms to trade, it is unclear how this will impact multinational companies with regulated facilities in more than one country. It is also not known whether intra-firm trading will be affected by these provisions.

Businesses support allowing legal entities, including the private sector, to participate in international emissions trading to reduce transaction costs and lower compliance costs.

Eligibility Criteria

Delegates are considering whether Parties that wish to trade at the beginning of the first commitment period (2008 through 2012) should affirmatively demonstrate their readiness or eligibility. The Protocol does not establish specific eligibility criteria for trading, but most delegates and industry observers agree that some form of eligibility requirements are appropriate. The Protocol states that Parties have to comply with monitoring, reporting and review requirements at the national level, but does not require review to determine trading eligibility.¹⁵

In addition to ratifying the Protocol and satisfying any other requirements under the compliance regime, several criteria affecting a Party’s eligibility to trade are under

⁹ Legal entity refers to any non-government entity.

¹⁰ This relates to transfer of units through emissions trading under Article 17. Legal entities are permitted to participate in CDM and JI.

¹¹ Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/2000/CRP.14/Add.1 (Volume 3). 15 September 2000. Page 11.

¹² Ibid., Page 11, para. 16.

¹³ G77 and China refers to the largest negotiating bloc of developing countries that are Parties to the UNFCCC.

¹⁴ The delegate from Samoa made statements related to legal entity participation in trading during the climate change meetings in Lyon, France in September 2000.

¹⁵ Articles 5, 7 and 8 of the Kyoto Protocol details reporting, monitoring and review requirements on a national level for Annex I Parties.

consideration. These criteria include: 1) implementation of a national system for the estimation of emissions by sources and sinks; 2) establishment of a national registry to track transfers of AAUs, CERs and ERUs; 3) completion and submittal of an accurate base year inventory and inventory report; and 4) timely submission of the last required periodic national communication.¹⁶

Language in the draft text calls for experts to review the eligibility criteria prior to the first commitment period.¹⁷ The Umbrella Group¹⁸ has proposed that expert review teams and the compliance committee could fulfill these functions. Expert review teams perform a review of national reporting under the Protocol; the compliance committee is a new entity that may be established to facilitate compliance with treaty obligations. Both oversight bodies could be overburdened by this role, however, depending on their available resources. Additional questions arise over who would be appointed to the oversight teams and how long it would take to establish them.

The eligibility review process could be time-consuming and may create backlogs prior to 2008. This might be avoided by allowing Parties to trade so long as the expert review team, or other appointed body, has not made an affirmative statement of a Party's *ineligibility* to trade. This would be contingent on whether the Party in question has followed the procedure established to demonstrate eligibility. Allowing Parties to submit eligibility requests several years prior to 2008, provided that the oversight body (or bodies) is in place to review the data, could also reduce backlogs.

Under one proposal, oversight entities would have a set time limit to review eligibility. If the time elapses and a Party has not received notice of a problem, it would be free to begin trading. Eligibility can still be rescinded pending a subsequent ruling.¹⁹ The exact period of time

for review has not been specified in the text. Also, the text does not include provisions that state what would happen to credits that had already been transferred before eligibility had been rescinded. Would the transferred units be invalidated *post facto*? If the credits are not at least temporarily invalidated, this plan could result in compliance problems if the Party does not become eligible to participate in trading.²⁰

Some argue for a more rigorous eligibility rule that would grant eligibility only after an affirmative statement by the oversight body. Under this approach, Parties would be ineligible to trade unless an affirmative statement of eligibility is made. This would discourage possible incentives for a Party to delay submitting data or to stall the evaluation process in hopes of allowing the review period to run out.

Despite these potential complications, affirmative demonstration of a Party's readiness to trade is a positive step and will enhance the integrity of the trading system. Eligibility requirements need to balance efficiency and speed of decisions with appropriate oversight.

Fungibility

Fungibility²¹ refers to the ability of Parties or legal entities to transfer CERs generated by CDM projects and ERUs generated by JI projects. For many potential project investors, the ability to trade CERs and ERUs is an important incentive because it increases the value of the project investments. The funds acquired from these transactions can be used to pay for control technologies or other climate mitigation efforts. Trading CERs and ERUs offers flexibility to Parties and the private sector and will help to attract project-based investment.

Most businesses and industry representatives interviewed for this paper favor decisions at COP-6 that provide incentives for Annex B Parties that wish to trade to take transparent and concrete actions as soon as possible to show that their registries, national systems, national inventories and base year reporting are complete and accurate.

¹⁶ Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/CRP.14/Add.1 (Volume 3). 15 September 2000. Pages 7 and 8, paras 4 - 8.

¹⁷ Ibid., Page 8.

¹⁸ The Umbrella Group is a negotiating coalition on UNFCCC issues. Umbrella Group members include Australia, Canada, Iceland, Norway, the Russian Federation, New Zealand, Japan, Ukraine and the United States.

¹⁹ Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/CRP.14/Add.1 (Volume 3). 15 September 2000. Page 8.

²⁰ Negotiating texts for Articles 5, 7 and 8 as well as compliance focus on prospective consequences in cases of non-compliance.

²¹ For the purpose of this paper, fungibility refers to the ability of a Party to transfer and exchange CERs and ERUs under emissions trading. It does not refer to the value of the units.

Confusion surrounding the debate on fungibility stems from different interpretations of the term. To some, fungibility refers to the ability to transfer units and/or the ability to exchange units. Transferability impacts whether a unit can be traded; exchangeability refers to whether different units—AAUs, CERs and ERUs—can be exchanged or interchanged. A range of views exists on possible limits that could be placed on the exchange of CERs and ERUs. The most extreme limits, articulated by several G77 and China members, include no transferring and no banking, and only allowing CERs and ERUs to be used for compliance purposes after all of a Party's AAUs have been used first. These proposals could drastically restrict the amount of AAUs available for trading.

Debates on the ability to exchange and transfer emissions units are rooted in different views on the nature and scope of the units themselves and affect how trading proceeds and what can be traded. India and other G77 and China members believe that because project-based reductions are distinct from AAUs they cannot be transferred under emissions trading. Others focus on the unit measure that CERs, ERUs and AAUs are expected to share—each unit will be equal to one metric ton of carbon dioxide equivalent—and support their transfer and exchange on that basis.²²

Contrasting visions of the nature and scope of assigned amount, CERs and ERUs underpin the political, conceptual and substantive disagreements over many emissions trading issues and are reflected in the draft text. Some provisions are confusing and conflicting, with brackets indicating areas of disagreement.²³ One proposal in the text, included in sections dealing with the issuance of ERUs and CERs, states that ERUs and CERs are not transferable, are not fungible with assigned amounts, and are “unlike concepts.”²⁴ While Parties considered these issues during the climate change meetings in Lyon, no consensus was evident among the negotiating blocs.

Businesses support the transfer of CERs and ERUs under emissions trading to encourage project-based investments. Further, CERs and ERUs should be able to be interchanged with AAUs for compliance purposes.

Developed countries and many companies support the ability to transfer and exchange CERs, ERUs and surplus AAUs. This conflict could be resolved by creating domestic vehicles to circumvent this obstacle. For example, governments could permit legal entities to swap CERs and ERUs for AAUs on a domestic level. Addressing the issue domestically, however, would not ensure that all governments would provide this opportunity and could still limit trading for some legal entities.

Liability

Liability rules assign responsibility in the event that a Party has failed to meet its emission reduction target and has transferred units under international emissions trading. Parties are permitted to transfer “surplus” units, or units that are not needed to meet emission reduction targets, under emissions trading. However, knowing which units are surplus will not be possible with certainty until the end of the first commitment period.

Specific liability rules are not necessary for CERs because they are verified and certified prior to transfer. The Umbrella Group and many companies maintain that ERUs are not subject to liability rules for similar reasons, but no international agreement has been reached on this point.

While the liability debate is centered on Party obligations, companies that wish to trade have expressed strong interest in this issue. Liability rules are linked to compliance with treaty obligations and may impact the responsibilities of legal entities that trade.

Responsibility to make up for transferred AAUs that are needed for compliance purposes could fall on the issuing Party, the ultimate user Party or a combination of the two. Delegates are considering several options to address liability concerns ranging from pure issuer and user liability proposals to hybrid approaches that distribute liability between transferring and acquiring Parties.

²² Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/CRP.14/Add.1 (Volume 3). 15 September 2000. Page 5.

²³ For example, the text states that “Parties [may] [may not] exchange emission reduction units, certified emissions reductions and [assigned amount units] [parts of assigned amount] [in accordance with rules and procedures established by the COP/MOP which are to ensure their effective environmental equivalence].” Ibid. Page 3.

²⁴ Ibid., Document FCCC/SB/CRP.14/Add.1 (Volume 1) Pages 40, para 143; and Document FCCC/SB/CRP.14/Add.1 (Volume 2) Page 48, paras 138 and 139.

Reserves that would set aside a portion of a Party's AAUs are also being discussed.

Issuer liability places responsibility on the initial issuing Party. It would provide certainty to acquiring Parties and legal entities that the AAUs they purchase could be used to meet their targets under the Protocol. AAUs would have the same value regardless of their origin. A strong international enforcement mechanism would likely be required to ensure that the treaty obligations to reduce greenhouse gas emissions are upheld.

While the Kyoto Protocol, by amendment, permits the adoption of binding consequences in cases of non-compliance, international agreement on a strong enforcement mechanism is unlikely given current political dynamics.²⁵ Strong international enforcement tools could include sanctions, other trade measures and/or mandatory monetary penalties. Some Parties look to the national reporting and review requirements combined with strong non-compliance consequences as means of providing international enforcement. However, even with those provisions, strict issuer liability may not discourage overselling—whether intentional or not.

User liability places responsibility on the ultimate holder of AAUs in the event of non-compliance. Since the responsibility to account for all acquired units would rest with the holder, transfers of AAUs would be considered carefully. AAUs would likely be rated and differentiated by the market, based on the likelihood of issuer compliance with the treaty. In contrast to issuer plans, user liability encourages trades with Parties that are likely to be in compliance at the end of the budget period. This advances the objective of the treaty and relies less heavily on an international enforcement regime.

Information on the status of the emissions inventories of potential trading partners would be necessary to allow participants to assess the risks associated with emissions trading. The business community will respond with products to mitigate the risks, such as insurance and third party entities that monitor the emissions inventories of

specific countries. The mandatory national registry that is expected for all trading Parties will assist in making public all information on the state of a Party's holdings, transfers, acquisitions, retirement and cancellation of assigned amount.

Opponents argue that user liability would complicate the system and increase transaction costs. Despite the mandatory registry, some worry that vital information needed to make decisions on a Party's risk of non-compliance will not be available. Others fear that user liability could create a domino effect in cases of non-compliance, thereby delaying and complicating true-up periods. The domino effect could occur in a robust trading system where Parties trade with multiple partners. For example, if Party A purchases credits from Party B, and Party B is found to be in non-compliance at the end of the budget period, under some forms of user liability, some or all of Party B's transferred AAUs could be invalidated. If the invalidated credits jeopardize Party A's compliance status, a domino effect could occur, impacting both Party A and those that may have purchased credits from Party A.

Attempts to address the criticisms of issuer and user approaches have led to the inclusion of several alternative and shared liability proposals in the draft mechanisms text. One plan, post-verification trading, which has been supported most visibly by the Swiss delegation, calls for Parties to allocate emissions annually under the commitment period and allows trading only of surplus AAUs beyond the established threshold. The UNFCCC Secretariat would verify and certify the surplus AAUs, and the Party could trade without liability concerns.²⁶

Hybrid approaches spread liability risks between transferring and acquiring Parties. For example, Parties may be allowed to trade a percentage of their assigned amount under issuer liability, with a shift to user liability in the event that a Party exceeds the percentage. The approach would not infringe on flexibility during the commitment period, but is more complicated than pure user liability. Further, determining the appropriate threshold to shift from issuer to user liability might be contentious.

²⁵ Article 18 of the Kyoto Protocol states that "any procedures and mechanisms under this Article entailing binding consequences shall be adopted by means of an amendment to the Protocol."

²⁶ Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/2000/CRP.14/Add.1 (Volume 3). 15 September 2000. Page 15.

During the Lyon climate change meetings, the EU released a new “mixed liability” proposal that would temporarily invalidate AAUs in the event of non-compliance with Protocol targets. Transferred AAUs would be invalidated based on when they had been transferred. AAUs that were transferred first would be invalidated last. Once the issuing Party brings itself back into compliance, the acquiring Party would be permitted to use the AAUs to meet future obligations. The Umbrella Group supports seller liability, but is reviewing hybrid approaches to address concerns about overselling.

Reserves offer different approaches. A commitment period reserve fund would set aside a portion of a Party’s assigned amount during the commitment period to be used in the event of overselling or non-compliance. If the Party were found to be out of compliance, the reserve units would be used to meet the commitment. If the Party were to meet its target, the units held in the reserve would be available for transfer or could be used to meet future commitments. The commitment period reserve has been criticized as limiting the flexibility of the five-year commitment period granted to Parties under the Protocol.

A compliance reserve places a portion of each AAU traded into a reserve account to be used if a Party is out of compliance at the end of the commitment period. Parties found in compliance at the end of the budget period would receive the units back to transfer or for use to meet future obligations.

While debate on emissions trading is active, very few economic analyses of the various liability proposals have been cited in the discussions. This is due in part to difficulties in modeling the impacts of the different proposals. Given the effect liability rules may have on overall treaty compliance, additional analysis is needed. Despite this, Parties may be headed toward resolution of liability rules through some form of hybrid approach at COP-6, perhaps as part of a package that addresses other emissions trading policy issues.

²⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change. Adopted December 1997. Pages 7 and 16.

²⁸ *Ibid.*, Page 12.

²⁹ The draft mechanisms text includes formulas that would limit net acquisitions of units under all three mechanisms at either: 1) 5 percent of its base year emissions multiplied by 5, divided by 2; or 2) 50 percent of the difference between its annual actual emissions in any year between 1994 and 2000, multiplied by 5, and its assigned amount. The G77 and China have included a proposal for a 25 to 30 percent cap on the amount of emissions acquired under the flexibility mechanisms to meet a Party’s target. The text also has an option that would remove the limits in the second or third commitment periods if “objective criteria to prevent hot air are established.” Mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol. Consolidated text principles, modalities, rules and guidelines. Document FCCC/SB/2000/CRP.14/Add.1 (Volume 3). Pages 17 and 18.

Supplementarity

The debate over supplementarity relates to provisions in the Kyoto Protocol that call for the supplemental use of the flexibility mechanisms in meeting Party obligations. Articles 6 and 17 of the Kyoto Protocol state that acquisition of ERUs and AAUs from another Party is “supplemental to domestic action.”²⁷ Article 12 states that Parties may use CERs to meet “part of” their emission reduction target.²⁸

The EU is the most vocal supporter of establishing quantitative restrictions on a Party’s use of the flexibility mechanisms, including emissions trading, to meet its emissions reduction target. Many within the G77 and China also support quantitative restrictions. The purpose of the limit is to ensure that most emissions reductions are achieved through domestic action.

Caps on the use of the flexibility mechanisms may also reduce transfers of AAUs from Russia and Central and Eastern European nations whose emissions targets have provided them with windfall AAUs due to their current economic circumstances. The windfall AAUs are often referred to as “hot air” units. Some worry that trading of “hot air” would enable other Annex B Parties to meet their obligations following a business as usual path. By establishing a quantitative limit on trading, fewer hot air AAUs will be transferred, requiring more emphasis on investment in emissions reduction activities. Efforts to address “hot air” through supplementarity provisions raise fairness questions, and could jeopardize the political compromise that was necessary to secure agreement on the Protocol.

The Umbrella Group and many businesses strongly oppose caps on the use of the mechanisms because they want maximum flexibility in developing emission reduction strategies. In Lyon, the EU, joined by some G77 and China members, re-affirmed their support for caps on the use of the mechanisms, but hold different views on the formula to set the cap.²⁹

Reaction by the Umbrella Group to the formulas has been critical. Opponents point out that despite strong beliefs by the EU that the bulk of activity should be done domestically, under the EU proposal, trading is allowed unfettered within the EU bubble. Even with the intensity of

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Emissions Trading Activity - 2000

Voluntary Trading Programs: BP and Shell

In January 2000, BP and Royal Dutch Shell separately implemented internal emissions trading programs as voluntary measures to reduce their greenhouse gas emissions. All of BP's business units have individual emissions reduction targets to reduce the company's overall greenhouse gas emissions by ten percent below 1990 levels by 2010. To ensure accountability and compliance, these targets were written into the performance contract of each business unit manager as a commitment equivalent to the unit's annual financial target. BP reported in October that prices for the internal emissions trading system have ranged from \$10 to \$11 per ton of carbon at the start of the program to about \$6 per ton in recent months. Additional information can be found at <http://www.bp.com>.

Under Shell's program, business units buy and sell emissions permits to achieve an annual two percent reduction in carbon emissions. Each business receives permits, worth 100 tons of carbon dioxide based on their 1998 emissions, covering approximately 30 percent of Shell's total emissions. The trading program is expected to help Shell meet its target of reducing greenhouse gas emissions by ten percent from 1990 levels by 2002. For more information on the Shell program, go to: <http://www.shell.com>.

International Transactions: TEPCO-Government of New South Wales

In February, Tokyo Electric Power Company (TEPCO) and the government of New South Wales, Australia agreed to an \$82 million carbon offset deal. Under the arrangement, TEPCO will invest in tree planting in New South Wales over the next ten years in exchange for carbon credits equal to the amount of carbon dioxide sequestered by the trees. The total investment could amount to approximately 100,000 acres of new forest. Initially, TEPCO will pay about \$20 million to plant trees on 25,000 acres of land, with the option to increase the investment. According to TEPCO, the total investment could generate about 30,000 tons of carbon credits annually. The specific price per ton of carbon dioxide equivalent for this transaction was not released. New South Wales is discussing similar agreements with other Japanese, U.S. and European firms.

TransAlta-HEW and Vision Quest Windelectric

In June, Canadian electric utility TransAlta purchased allowances for 24,000 tons of carbon dioxide equivalent from German utility company Hamburgische Electricitäts-Werke AG (HEW). TransAlta is Canada's second largest producer of greenhouse gases and the largest investor-owned utility in Canada. Under this deal, HEW will replace some of its coal-fired generation capacity with wind turbines over the next seven years, adding to the utility company's current wind generation capacity of 4 million kWh. HEW's reductions will be verified by TUV, a major German environmental quality and safety standards organization.

TransAlta announced in September that it had made a Can\$5 million investment in Vision Quest Windelectric, a new Calgary company developing alternative power. Money from the agreement will be used to build 14 wind turbines in the Pincher Creek area of Canada. The new wind turbines will offset approximately 35,000 tons of carbon dioxide equivalent per year, or almost one million tons over the next 25 years.

TransAlta has also created a Can\$100 million environmental fund and has pledged to reduce its Canadian net emissions of greenhouse gases to zero by 2024. The fund money will be reserved for investments in renewable energy, greenhouse gas offset projects and research and development of clean coal technology. For more information, go to: <http://www.transalta.com>.

PG&E Corporation-Waste Management

PG&E Corporation and Waste Management announced a joint initiative in September to offset emissions from a proposed 500-MW power plant in San Diego County with a fleet of natural gas trucks. The companies will replace 120 of Waste Management's diesel-fueled garbage trucks over the next 18 months with new natural gas-fueled trucks, reducing air emissions by more than 50 percent. The estimated cost of the fleet conversion to liquefied natural gas fuel systems is estimated at \$33 million. This project is the first in the U.S. to offset emissions from a new power plant by reducing emissions from mobile sources. For more information, go to: <http://www.pgecorp.com/news/releases/000908r.html>.

Emissions Trading Simulation

In September, the first independent test of emissions trading conducted by the International Energy Agency (IEA) showed that international emissions trading could generate average cost reductions of 60 percent compared with savings from domestic

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Emissions Trading Activity - 2000 continued

measures alone.³⁰ The results of the IEA study were released at the September climate change meetings in Lyon, France. The test used an Internet-based system to simulate emissions trading among 16 countries, five private sector entities, the European Commission and two IEA players. The study took place over four weeks with eight two-hour sessions. Participating countries included Australia, Austria, Canada, Czech Republic, Denmark, France, Germany, Hungary, Italy, Japan, the Netherlands, Poland, the Russian Federation, UK, U.S. and Switzerland. The test did not utilize trading restrictions, penalties for non-compliance or assigned costs to trade emissions permits, which resulted in wide price variations in the early stages of the simulation. For more information, go to: <http://www.iea.org/envissu/lyon.pdf>.

Partnership for Climate Action: Seven Companies to Cut CO₂ by 25 Percent

In October, seven companies pledged to reduce their carbon dioxide emissions by 25 percent from 1990 levels by 2010. Under the name of the Partnership for Climate Action, BP, DuPont, Shell International, Suncor Energy of

Canada, Ontario Power Generation, Alcan Aluminum Ltd. of Canada and French aluminum firm Pechiney SA will collectively aim to annually cut the equivalent of at least 80 million metric tons of carbon dioxide equivalent by 2010. Each company will measure and publicly report its emissions with the assistance of Environmental Defense and other outside auditors. The program will also serve as a trial emissions trading system where the participants will be allowed to transfer and acquire emissions reductions if their cuts exceed their targets. Additional information can be found at:

http://www.environmentaldefense.org/pubs/NewsReleases/2000/Oct/g_greenhouse.html.

Cantor Fitzgerald and PricewaterhouseCoopers Emissions Trading Website

In November 2000, Cantor Fitzgerald, a global financial and emissions brokerage firm, and PWC, plan to launch CO2e.com, a website designed to serve as an online resource for greenhouse gas commerce and a 24-hour marketplace for trading emissions offsets. For more information, go to: <http://www.CO2e.com>.

the arguments made by the EU on complementarity, many believe the issue is a bargaining chip in the final negotiations at COP-6. In addition, there is growing interest among EU member countries in the benefits of emissions trading and some members are reconsidering restrictions on the ability to use the mechanisms. As COP-6 approaches, the importance of resolving disputes over complementarity will increase. Complementarity will be one of several difficult political questions that will be considered at the highest levels at the talks.

Perspectives on Recent Trading Activities:

In order to assist policymakers with the development of domestic and international rules for emissions trading, it is useful to examine recent activity in the greenhouse gas market. Many of these activities are often referred to as "trading" but are more accurately described as individual contract-based transactions, providing for future delivery of greenhouse gas emissions

reductions. Official UNFCCC-approved trades cannot begin until clear rules are adopted and registries are established to monitor transactions. Based on interviews with trading brokers and other experts in this market, several trends on participants, legal issues, market transparency, project type and price can be identified.

Participants

The main participants in emissions trading continue to be multinational companies and Canadian companies that

Legal Terms

The actual content of most current emissions transactions is for legal rights associated with reductions or legal rights associated with data that support emissions reductions. Because neither domestic nor international law recognizes credits associated with the reduction of one ton of carbon dioxide equivalent, those engaged in trading do not purchase, sell or own currently legally recognized emission reductions credits or rights; rather, the transactions involve the purchase or sale of rights that may be associated with expected future emissions reductions for projects.

³⁰ International Energy Agency. Insights from the IEA International Emissions Trading Simulation. September 2000

³¹ The government of Canada has encouraged voluntary greenhouse gas emissions reductions commitments by Canadian companies through the Greenhouse Gas Emission Reduction Trading (GERT) pilot program and the Pilot Emission Reduction Trading (PERT) project. For more information, please refer to www.gert.org and www.pert.org.

have undertaken voluntary obligations to reduce their emissions.³¹ Other participants include U.S.-based companies, utilities, energy-intensive industries and non-profit organizations. Participants aim to take advantage of this emerging market or to have an effect on domestic and international policy development. Because U.S. companies are not subject to a domestic or international system at this time, their level of participation in emissions trading has been limited and in some cases focused on low- or no-risk transactions.

Market Drivers and Transparency

In 2000, public accounts of emissions trading activities decreased compared with information available in 1999. Emissions trading brokers attribute the decrease in the number of public transactions to the fact that trading has moved from an initial phase of corporate goodwill demonstrations to a second phase of risk management and traditional business transactions. In this light, companies have been actively making transactions, but many have kept the information proprietary in order to maintain a competitive advantage. In other emissions markets, a transaction is made public when payment is rendered and the credits are actually transferred on a government or other public registry. Since many of the present greenhouse gas contracts are based on future delivery of reductions and because the physical transfer of credits does not take place on a registry, they may not be disclosed. Despite the non-transparent nature of current transactions, emissions trading brokers say there have been many brokered transactions as well as direct, non-brokered deals that have taken place this year, particularly in the areas of control technologies, technological improvements and the agricultural sector, such as methane capture and low-till agriculture.

Without a “credit for early action” law or a functional emissions trading system, companies that are currently engaged in emissions transactions are doing so on a voluntary basis, oftentimes with expectations to quantify their reductions in terms of future credits that they hope will be recognized retroactively. Some companies view early action as an opportunity to “buy up carrots before the sticks are put in place.” If and when the regulations

come into effect, the credits may increase in value and those industries that acted early will reap the benefits.

Some companies are quietly soliciting proposals within the greenhouse gas trading market, establishing contacts and gradually moving along the learning curve in order to gain experience before domestic and/or international rules are established. Some industry leaders consider it important to establish risk-management practices by gaining contractual experience and early exposure to the market, and to reap ancillary benefits associated with good environmental stewardship. Some companies are engaged in emissions transactions because they seek to diversify their portfolio of environmental projects. Others are in the process of determining their emissions footprint by developing an assessment of historic, current and future emissions to determine their cost of compliance with different emissions reductions scenarios and to estimate their future level of participation in the emissions trading market. The drivers behind individual corporations’ decisions to engage in emissions trading are diverse. Some companies, like BP, have adopted internal emissions trading policies that are driven by a mandate from the chairman of the board of directors, while other companies have taken a “bottom-up” approach that is designed by project developers and is then presented to upper management.

Types and Prices of Projects

The following section illustrates the types and prices of current emissions trading transactions in order to provide a snapshot of market activity in its early stages.

Companies engaged in the initial phases of emissions trading have had access to purchases of carbon sequestration projects ranging in price from fifty cents per ton of carbon dioxide equivalent to \$1 per ton for straight price purchases.³² Those involved in these trades indicate that the serious sellers in the marketplace have strived to keep the price below \$2 per ton and that, in general, prices are holding steady. Projects based on clean energy technologies such as solar power, wind power, biomass, hydropower, fuel switching or methane gas recapture, range in price from \$2 per ton upward to \$50 or higher.

Investors must weigh the environmental and technological quality of a project. While clean energy technology

³² Some emissions brokers indicated that the upper end of the price range is closer to \$2.00 per ton of carbon dioxide equivalent or as high as \$2.50 per ton, although there have been very few trades that occurred at those prices and the \$0.50 per ton to \$1.00 per ton range is a more accurate representation of general trading activity.

projects sometimes have higher up-front costs, they provide a higher degree of environmental integrity and greater potential for accuracy in emissions verification. Some companies view sequestration projects as inherently risky until the domestic and international rules are determined. This is due to the uncertain nature of carbon uptake in sequestration projects and the growing debate over whether to limit the use of these projects through emissions reduction programs such as the CDM. Others view sequestration projects as an inexpensive method to buy reductions and manage potential risk.

Most of the current transactions are based on conventional commercial contracts for carbon dioxide or other greenhouse gases that involve deferred payment or payment contingent upon delivery. In addition, recent trades have been more weighted toward options for future purchases. Although there is no standard emissions trading contract, the strength of warranties and remedies continues to increase as buyers and sellers move up the learning curve. Emissions traders say that there have been very few deals where the buyer has assumed the entire risk of the transaction upfront. Due to the lack of rules, brokers say that there is usually ample room to let the position expire with little or no financial penalty if options are not ultimately exercised.

Clear legal rules are needed to create a robust emissions trading system. Recognizable market prices for emissions reductions and credits, as well as standardized contracts for transactions, will evolve as the market develops.

Conclusion: Based on discussions with business executives, brokers and other stakeholders, emissions trading offers a potentially cost-effective means to reduce greenhouse gas emissions. While many agree on the key issues and problems related to emissions trading, there is no consensus on the appropriate policy solutions. Part of the problem lies with forecasting what a mature emissions trading system would look like. Modeling is difficult and often cannot predict future scenarios with accuracy. Most companies believe that domestic and international rules need to be established to create a robust greenhouse gas trading market; however, some companies are already taking steps to gain experience with emissions trading in the absence of regulations.

On the domestic front, several important practical decisions regarding the incidence and operation of a trading system must be addressed. Many speculate that an eventual domestic emissions trading program will target upstream sources due to political feasibility and ease of administration, or will combine a hybrid approach to capture upstream sources in addition to select midstream or downstream sectors.

Since several countries have either developed or are considering domestic pilot emissions trading programs, some wonder if American companies could be at a competitive disadvantage unless the U.S. government develops its own program. A U.S. domestic emissions trading program could provide the opportunity to fine-tune regulatory policies prior to the implementation of a potential international trading regime.

A strong U.S. domestic trading plan would help to resolve outstanding questions related to the international emissions trading regime by developing a strong link between domestic and international trading provisions, rules and systems. Clear, transparent rules will allow market participants to trade freely, building liquidity, and helping to establish market prices for emissions reductions and credits. Emissions trading will not be robust until clear legal rules are established.

Looking toward COP-6, it is likely that some international emissions trading rules will be adopted before a domestic program in the U.S. It is important that the international decisions provide governments with flexibility to make appropriate decisions on the design of their domestic systems and to learn from experience. Areas that require further consideration include the impact of trading rules on multinational corporations and the economic and market response to different liability proposals.

If a package of trading rules is adopted at COP-6, it will likely form the foundation for the international emissions trading market, irrespective of ratification of the Kyoto Protocol. The U.S. and international business community has a stake in this outcome and should continue to work with decision makers to establish an efficient system.



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